

DOE OFFICE OF INDIAN ENERGY

# Renewable Energy Project Development: Advanced Financing Process and Structures



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Indian Energy

# Course Outline

## What we will cover...

- About the DOE Office of Indian Energy Education Initiative

- **Project Financing Structures**

- Direct Ownership

- Partnership Flip

- Sale Leaseback

- Inverted Lease/Lease Pass-Through

- **Additional Information and Resources**

# Introduction

The U.S. Department of Energy (DOE) Office of Indian Energy Policy and Programs is responsible for assisting Tribes with energy planning and development, infrastructure, energy costs, and electrification of Indian lands and homes.

As part of this commitment and on behalf of DOE, the Office of Indian Energy is leading *education* and *capacity building* efforts in Indian Country.

# Training Program Objective and Approach

A specially designed curriculum was created to give tribal leaders and professionals background information in renewable energy development to:

- *Present foundational information on strategic energy planning, grid basics, and renewable energy technologies*
- *Break down the components of the project development process on the facility, commercial, and community scales*
- *Explain how the various financing structures can be practical for projects on tribal lands.*

# Course Audiences

## Tribal Leaders

- Primary decision makers
- Understand terminology
- Understand key decision points and factors influencing them

## Staff/Project Management

- May be self-managing project or acting as managing consultants
- Communicate at key points with decision makers
- Require in-depth knowledge of process



# How This Advanced/In-Depth Course Fits

## Essentials

Basic process, decisions, and concepts for project development

**Audience:** All involved in project

## Advanced/In-Depth

Detailed academic information for deep understanding of concepts

**Audience:** Project and contract managers

## Facility

Comprehensive, in-depth process pathways for project development and financing by project scale

**Audience:** Decision makers and project and contract managers

## Community

Comprehensive, in-depth process pathways for project development and financing by project scale

**Audience:** Decision makers and project and contract managers

## Commercial

Comprehensive, in-depth process pathways for project development and financing by project scale

**Audience:** Decision makers and project and contract managers

# Terminology in These Courses



## Why Is It Important?

- Provides common language for internal discussion
- Assists in interaction with external organizations
- Increases credibility in project development

## What Does It Include?

- Common terms and language for project development
- Acronyms for and roles of:
  - Federal agencies
  - Common federal and state policies



Your resource for reference: DOE-IE Course Terminology Guide



- Tax-Equity Partnership
- Risk and Uncertainty
- Roles of the Tribe
- Levelized Cost of Energy (LCOE)
- The Project Team

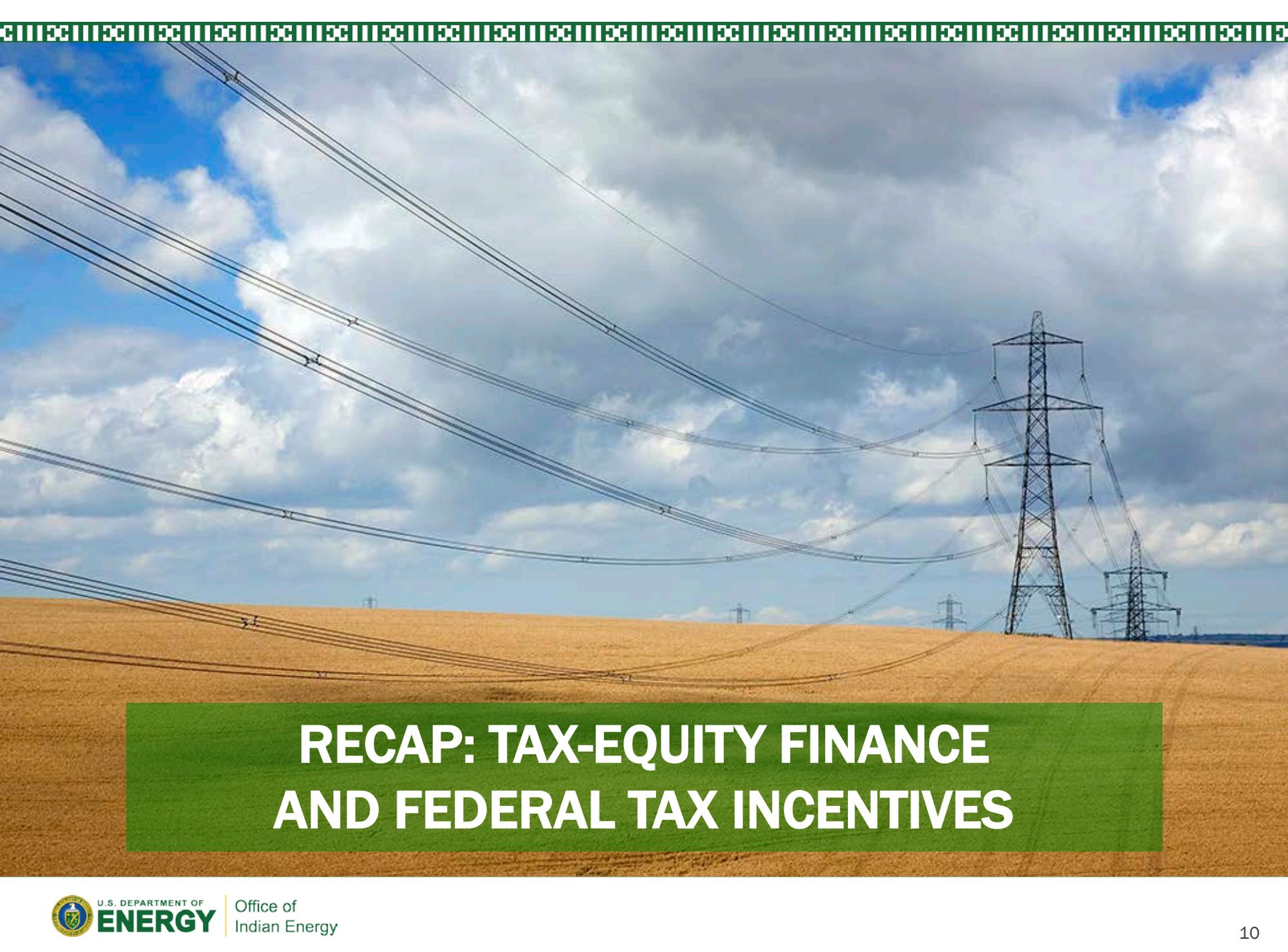
**In-depth information on each key concept available in Advanced Courses**

# About the Speaker

## Travis Lowder

- Renewable energy and financial policy analyst
- Background in international development and environmental governance





# RECAP: TAX-EQUITY FINANCE AND FEDERAL TAX INCENTIVES



# Key Concept: Tax-Equity Partnerships



- Tribe can benefit from tax-equity incentives without being taxable
- Tribe can partner with third-party tax investors and/or developers to gain this advantage
  - Recent IRS private letter ruling (PLR) supports tribal partnerships with third-party tax equity
  - Even with IRS ruling, the Tribe needs capital to build a large renewable project; the Tribe can enjoy tax incentives by partnering with “Tax Equity,” a corporate investor
- Tax incentives (Modified Accelerated Cost Recovery System [MACRS] and either Production Tax Credit [PTC] or Investment Tax Credit [ITC]) can represent up to half the project value, or reduce project’s capital costs by ~50%
- Tribe benefits either by reducing its electricity costs or by offering a more competitive price for energy/renewable energy credits (RECs) from the project to a utility

# So Why Seek a Tax-Equity Finance Partner?

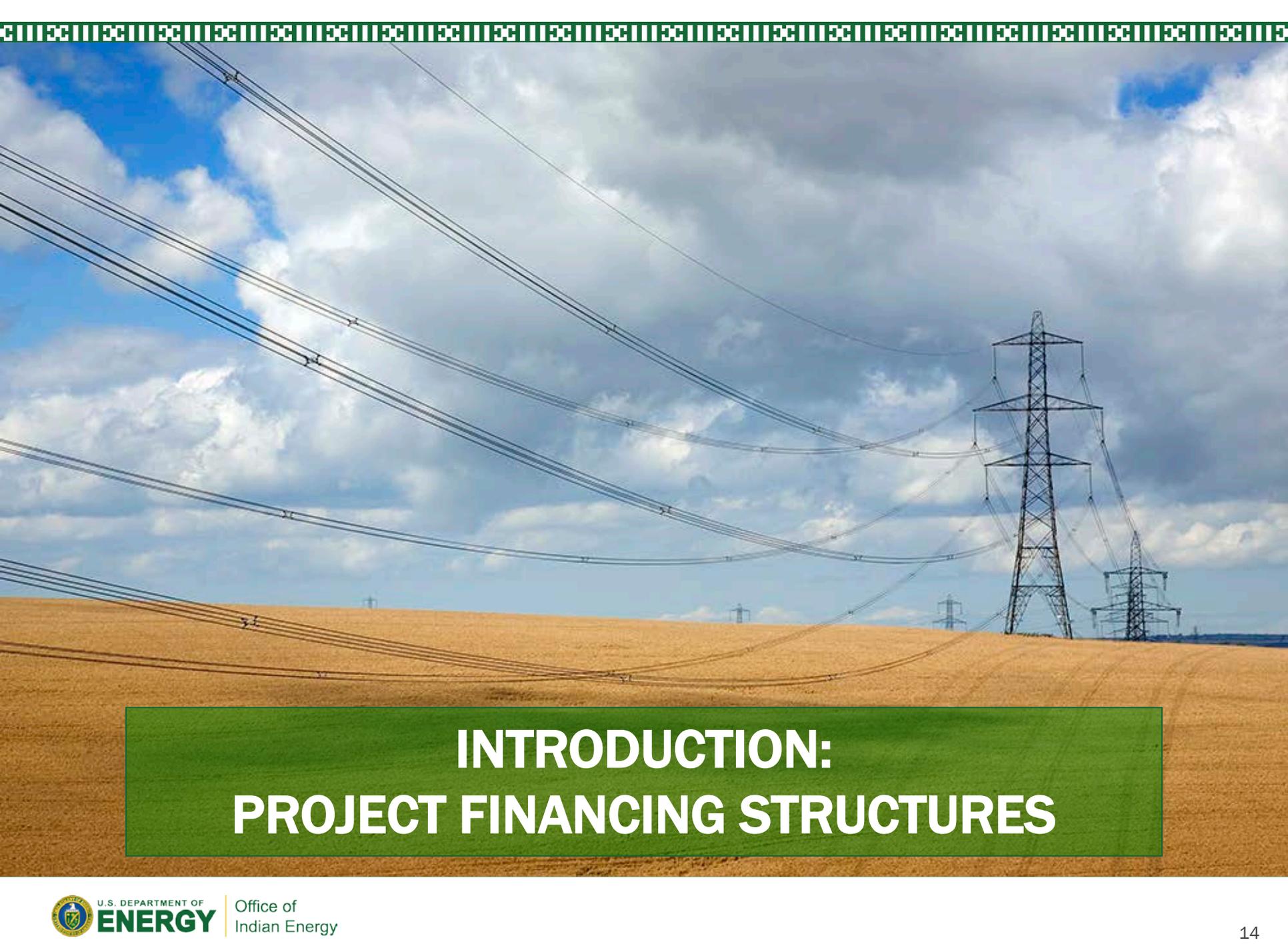
- Tax incentives (MACRS and either PTC or ITC) can represent up to half the project value or reduce project's capital costs by ~50%



- Tax incentives can help to achieve a competitive price of power
- Many projects also require state-level incentives to be economic

# Comparison of Tax Incentives

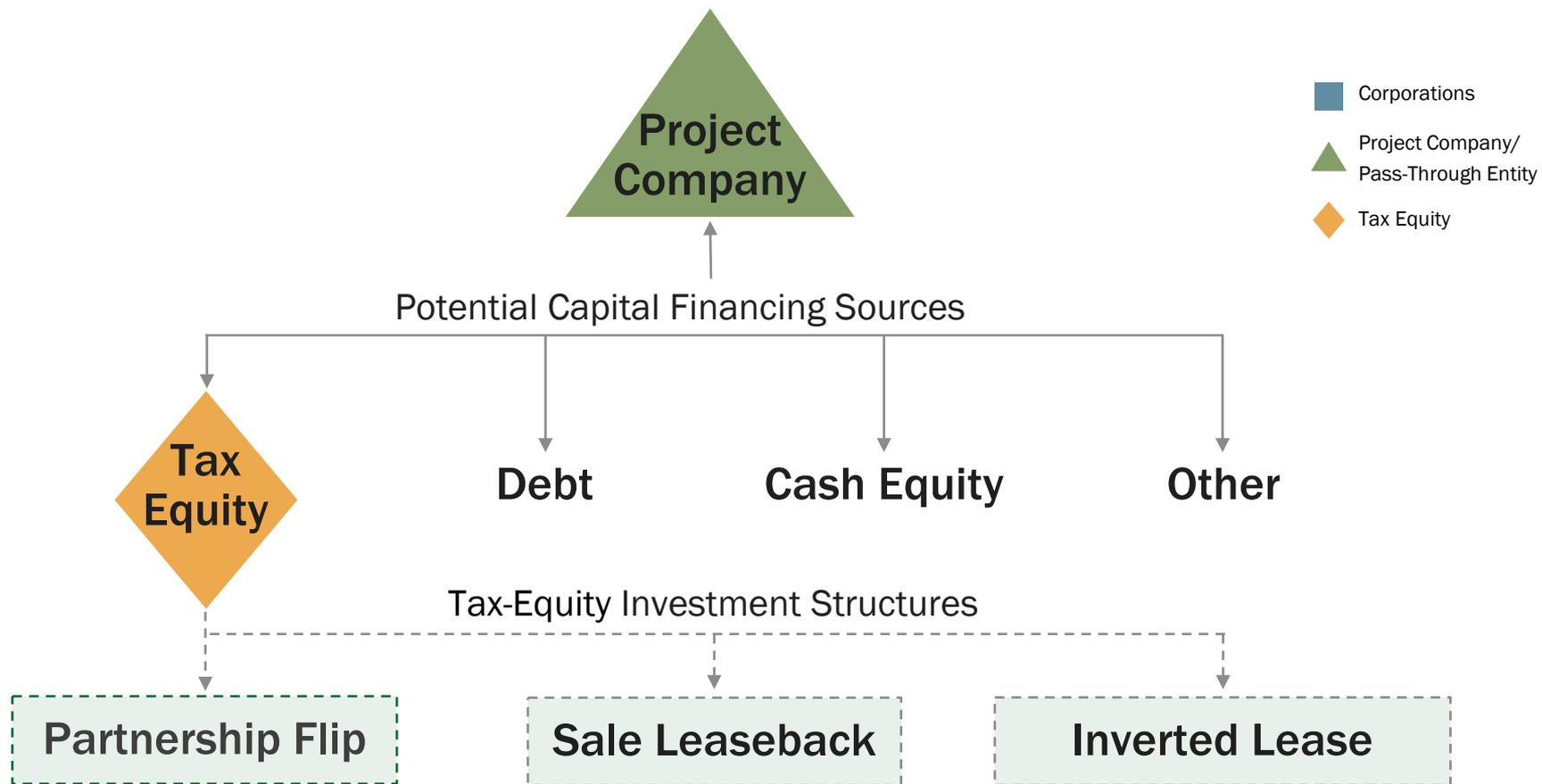
	PTC	ITC	Accelerated Depreciation
Value	Tax credit of 2.3¢/kWh or 1.1¢/kWh, depending on tech	Tax credit of 10% or 30% of project costs, depending on tech	Depreciation of eligible costs (not all project costs qualify)
Select Qualifying Technologies	<ul style="list-style-type: none"> <li>• Wind</li> <li>• Geothermal</li> <li>• Biomass</li> <li>• Hydro</li> </ul>	<ul style="list-style-type: none"> <li>• Solar</li> <li>• Geothermal</li> <li>• Fuel cells</li> </ul>	Depreciation can be taken with either PTC or ITC
Basis	Energy produced over 10-year period. Can be combined with depreciation of equipment.	Eligible project cost. Credit taken at the time the project is placed in service. Can be combined with depreciation of equipment.	<p><b>MACRS:</b> 5-year depreciation schedule</p> <p><b>Bonus:</b> 50% first year accelerated depreciation on equipment</p>
Expiration	Start construction before 1/1/2014	Placed in service before 1/1/2017	<p><b>MACRS:</b> None</p> <p><b>Bonus:</b> 1/1/2014</p>



# INTRODUCTION: PROJECT FINANCING STRUCTURES



# Capital Structure with Tax Equity



# March 8, 2013 IRS Private Letter Ruling – 111532-11

- An Indian tribal government is not considered a “governmental unit” or “tax-exempt organization” for purposes of renewable energy tax subsidies
- This presumably would permit tribal governments to enter into any one of the three tax-equity financing structures *without* jeopardizing access and use of federal tax incentives (**BIG change**)
- Yet to be tested in the market; Tribes should to seek legal counsel

**IRS Private Letter Ruling:** <http://www.irs.gov/pub/irs-wd/1310001.pdf>

**Potential tribal implications:** <http://www.lexology.com/library/detail.aspx?g=2e3eaf47-4fa7-4318-8dff-6ddda49baa56>



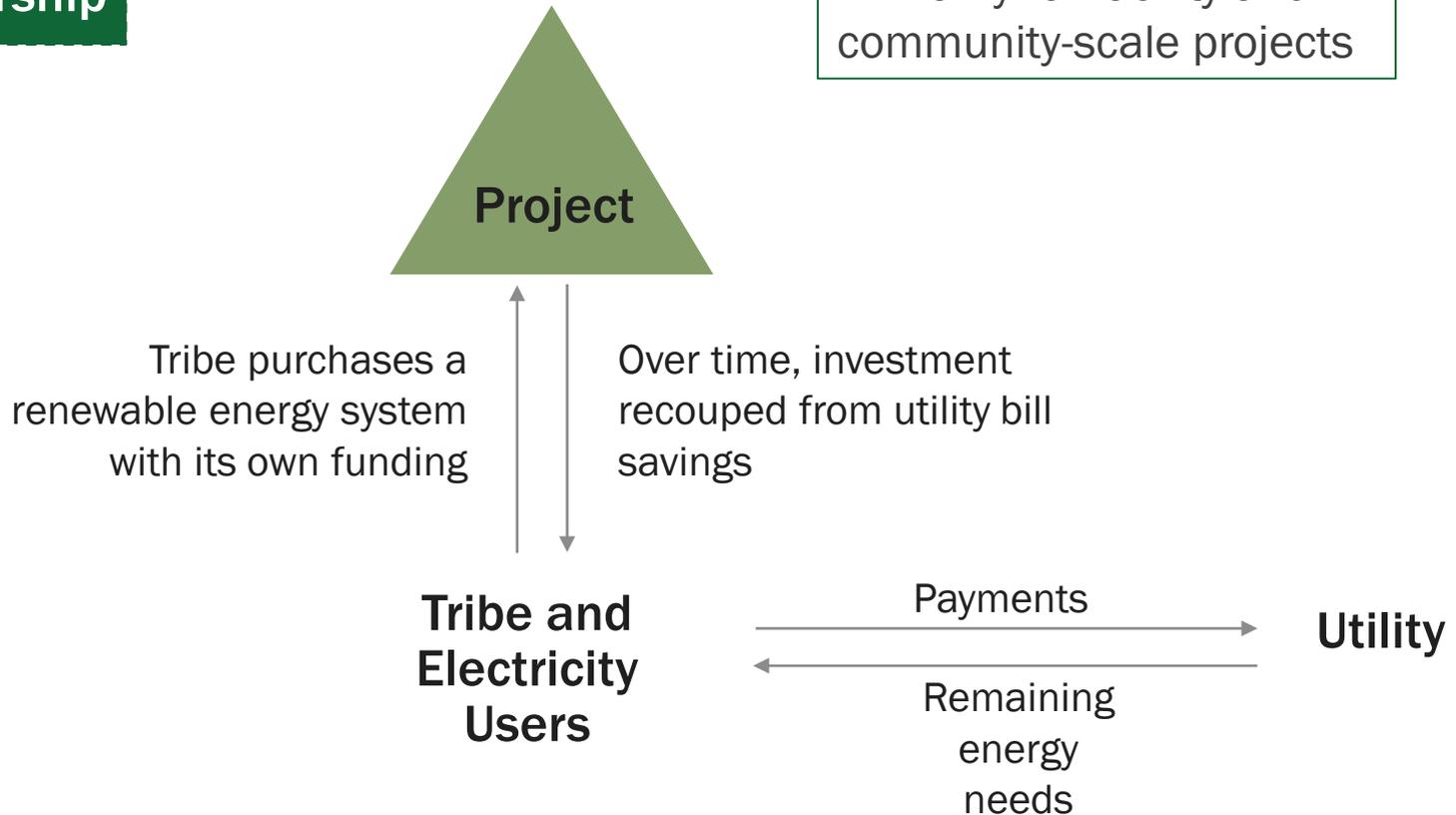
# PROJECT FINANCING STRUCTURES: DIRECT OWNERSHIP



# Direct Ownership Structure

## Direct Ownership

Primarily for facility and community-scale projects



The Tribe is the owner in this structure and self-generates its electricity.

# Direct Ownership: Advantages and Challenges

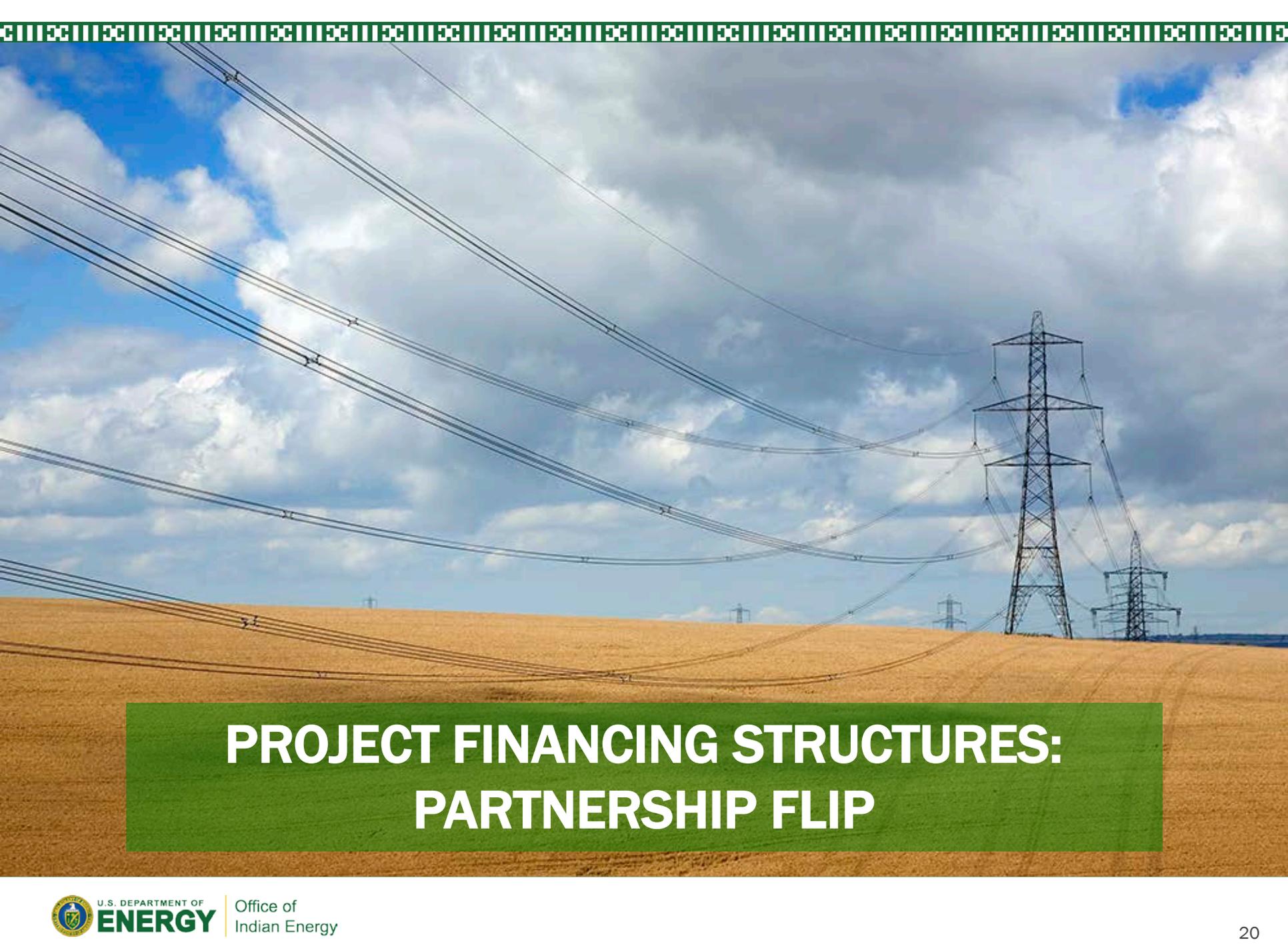
## Advantages

- Potential to use cheap public debt (tax-exempt debt issuance)
- Full control over a project: design, operations, and risks
- Ability to choose what to do with renewable energy attributes generated by the project (retain or monetize)

## Challenges

- The Tribe does not have a tax liability to efficiently apply the federal renewable energy tax incentives
- Need expertise to navigate potential revenues from renewable portfolio standard-driven subsidies
- Debt lender requirements could complicate the model (if used)
- Project management expertise is required

Source: Cory et al. 2008, Pearlman 2011a



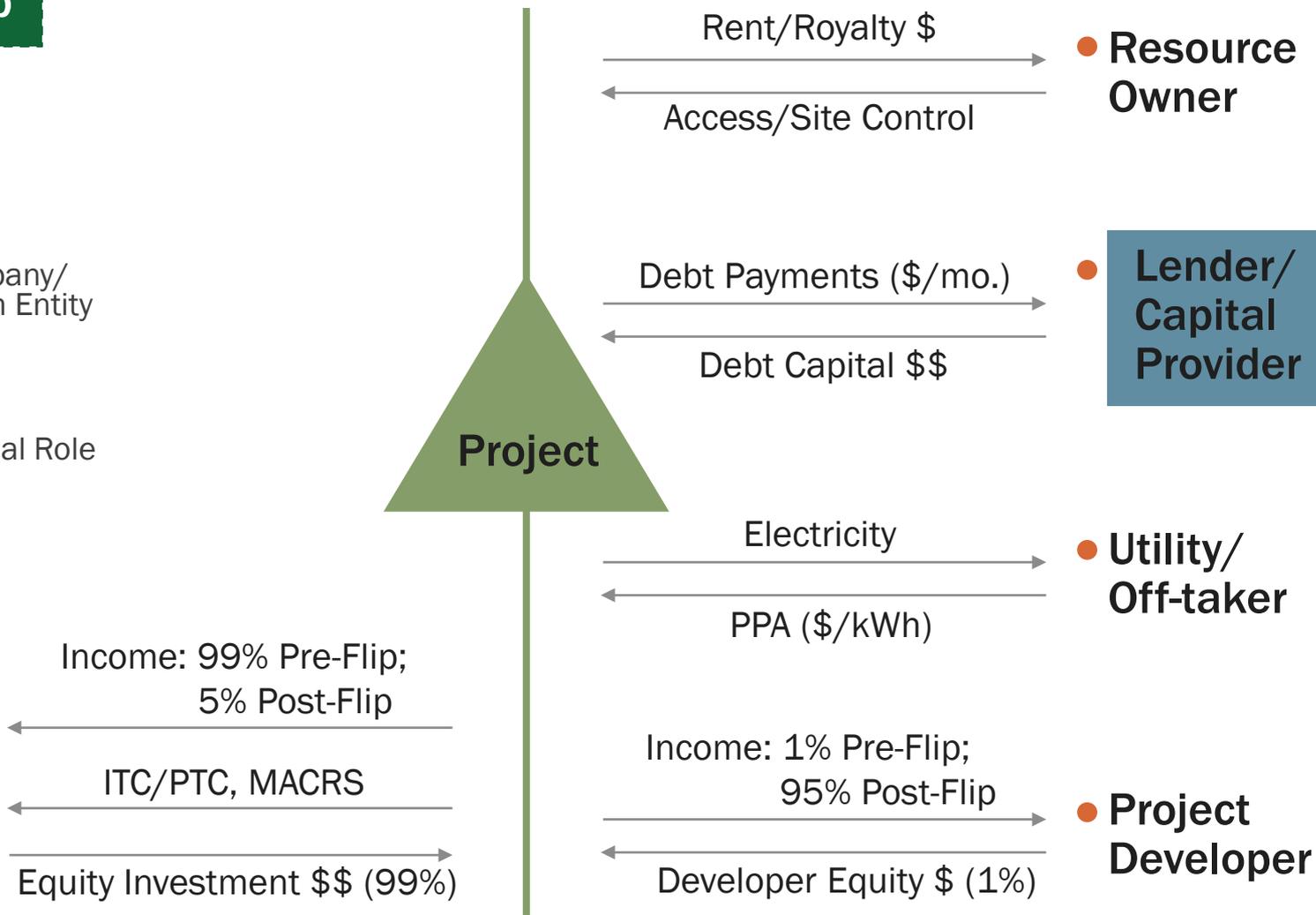
# PROJECT FINANCING STRUCTURES: PARTNERSHIP FLIP



# Partnership Flip Structure

## Partnership Flip

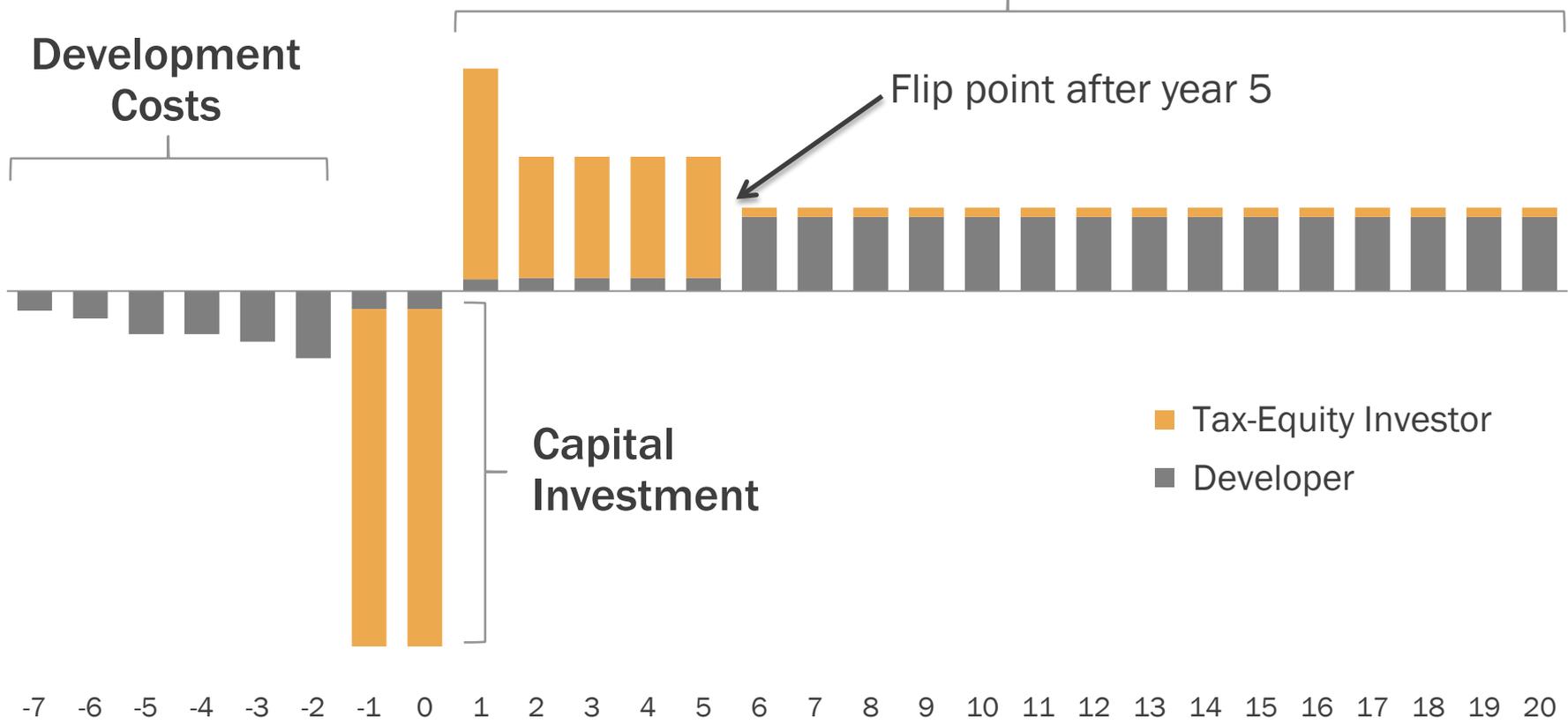
- Corporations
- ▲ Project Company/  
Pass-Through Entity
- ◆ Tax Equity
- Potential Tribal Role



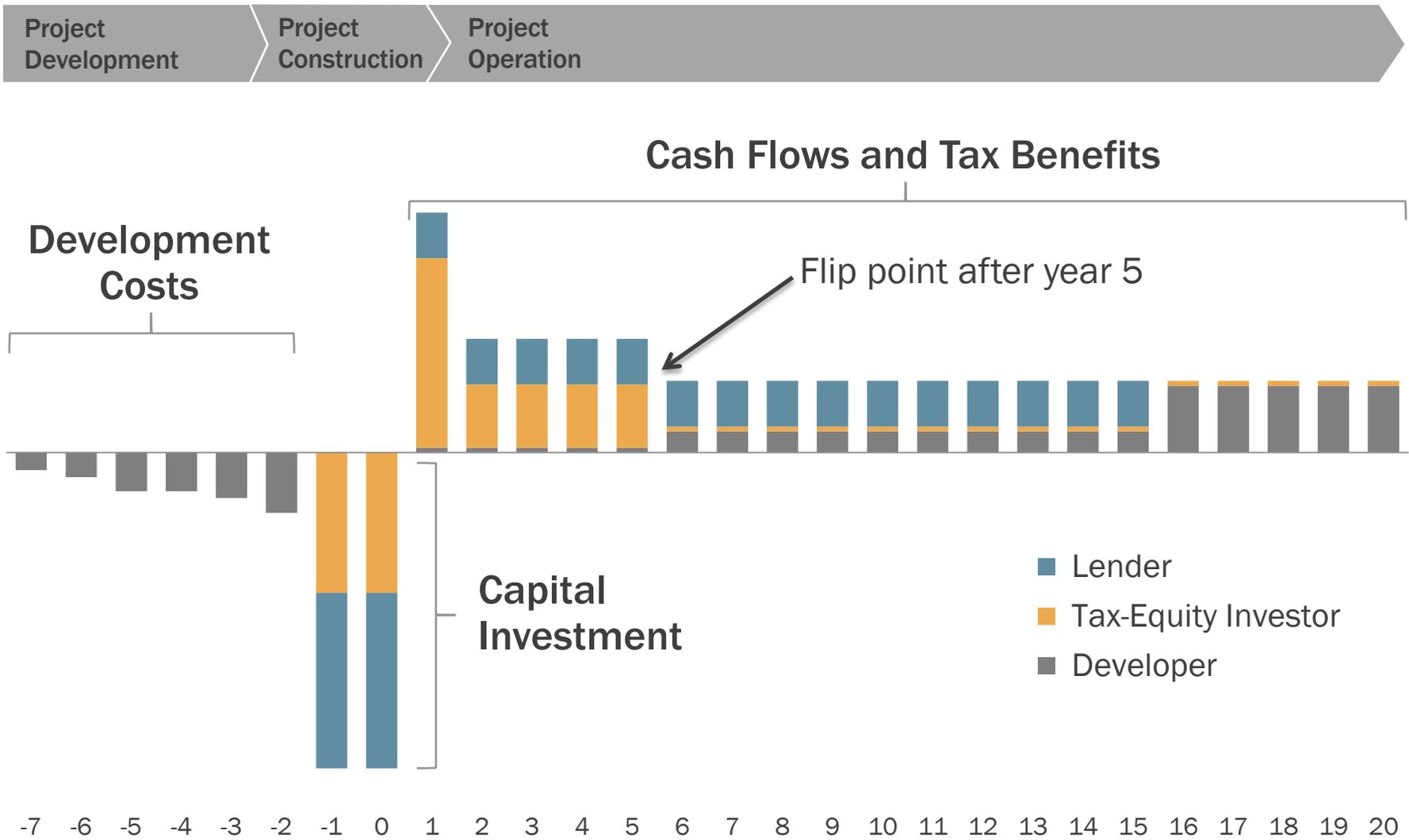
# Cash Flow Example: Partnership Flip, No Debt



Cash Flows and Tax Benefits\*



# Cash Flow Example: Partnership Flip, With Debt



# Partnership Flip: Advantages and Challenges

## Advantages

- Tax-equity provides most of the capital up front
- Easier way for Tribe/developer to own the project in the long run (than sale leaseback)
- Generally familiar structure for wind and solar industry, so many tax-equity investors have experience

## Challenges

- Limited distribution payments to Tribe/developer until later in project (e.g., year 6 for solar; year 11 for wind)
- Still requires up-front capital contribution from developer Tribe (though could be as little as 1%)
- Developer must consult tax equity partner on major decisions



# PROJECT FINANCING STRUCTURES: SALE LEASEBACK

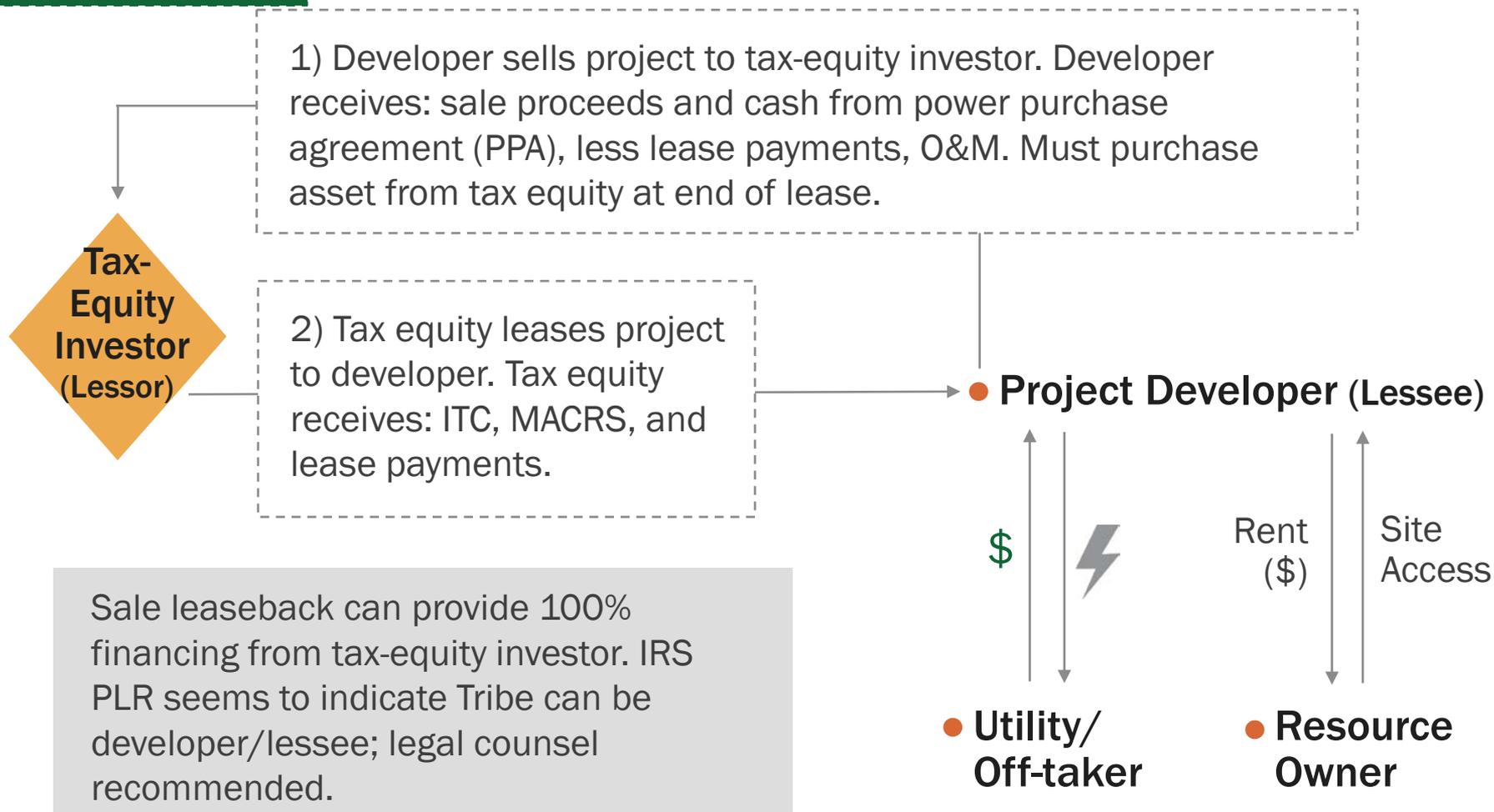


# Sale Leaseback Structure

◆ Tax Equity

● Potential Tribal Role

## Sale Leaseback

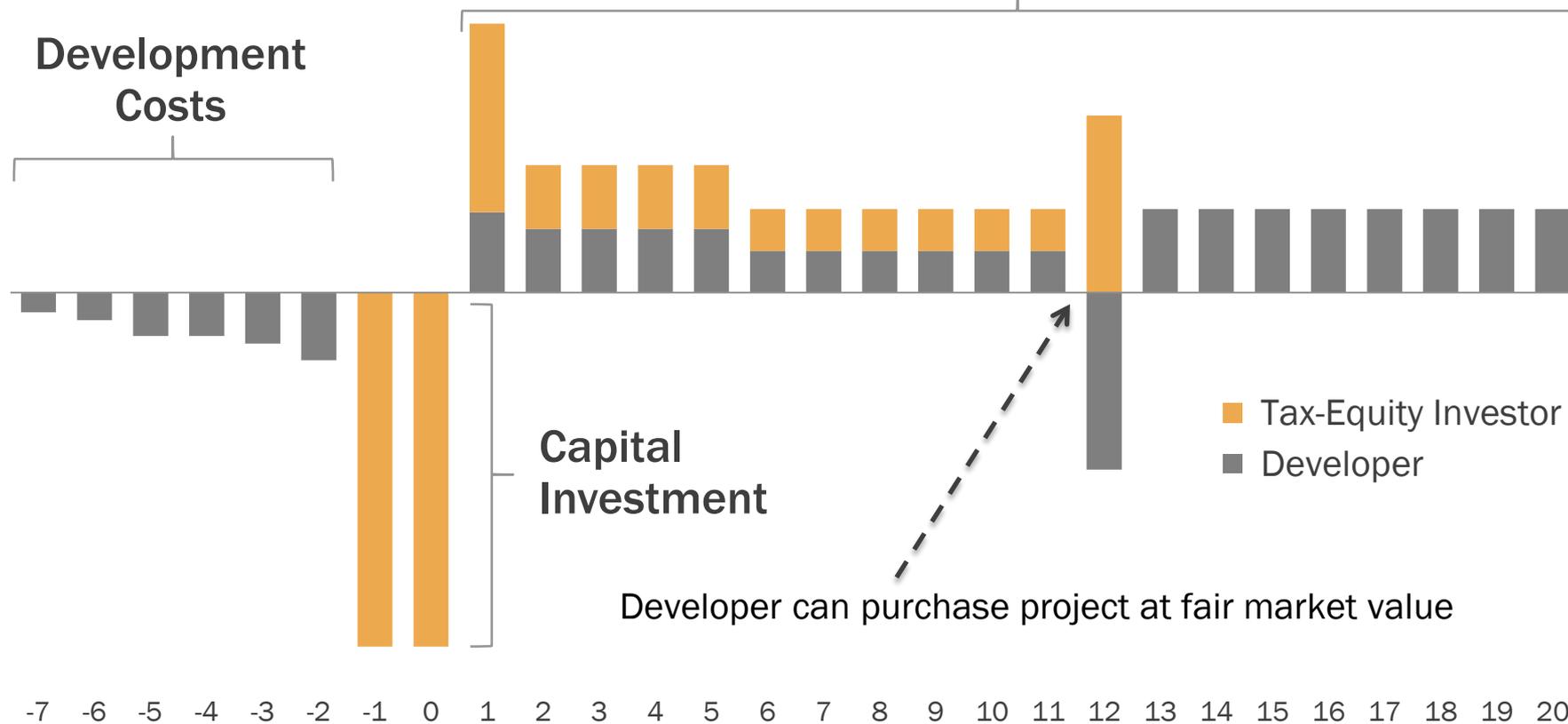


Sale leaseback can provide 100% financing from tax-equity investor. IRS PLR seems to indicate Tribe can be developer/lessee; legal counsel recommended.

# Cash Flow Example: Sale Leaseback, No Debt



## Cash Flows and Tax Benefits



# Sale Leaseback: Advantages and Challenges

## Advantages

- Tax equity can provide 100% of the capital up front
- Developer gets large cash distribution upon sale of project
- Familiar and utilized structure among solar community

## Challenges

- Most costly for Tribe/developer to acquire long-term ownership of project (large cash infusion ~ year 10)
- Tribe/developer operates the project
- Requires largest equity contribution from tax-equity investor (could limit investment)
- Limited participation to developer/Tribe until buyout of project (~ year 10)
- Not possible for PTC-based project (e.g., wind)

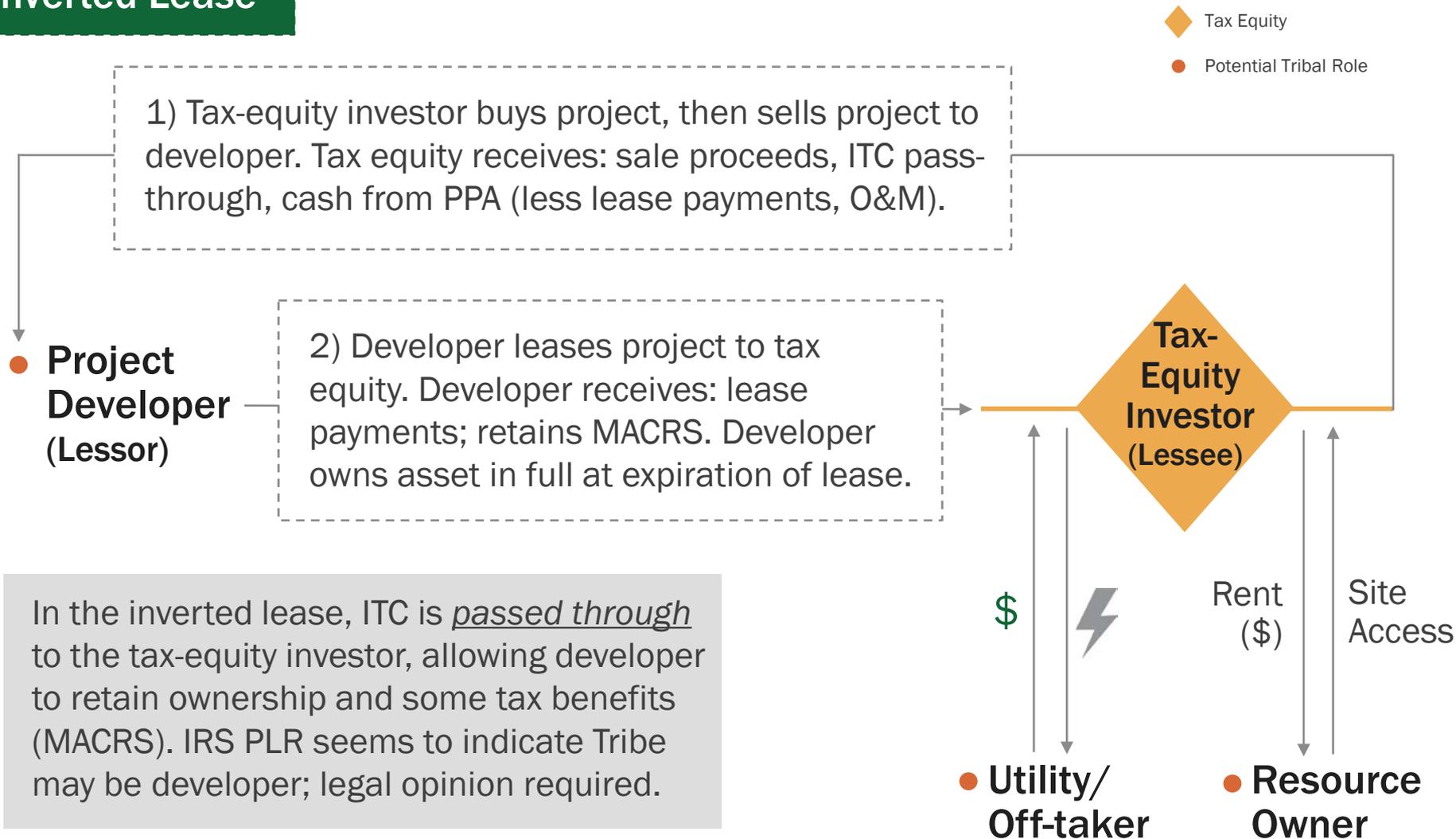


# PROJECT FINANCING STRUCTURES: INVERTED LEASE/LEASE PASS-THROUGH



# Inverted Lease/Lease Pass-Through Structure

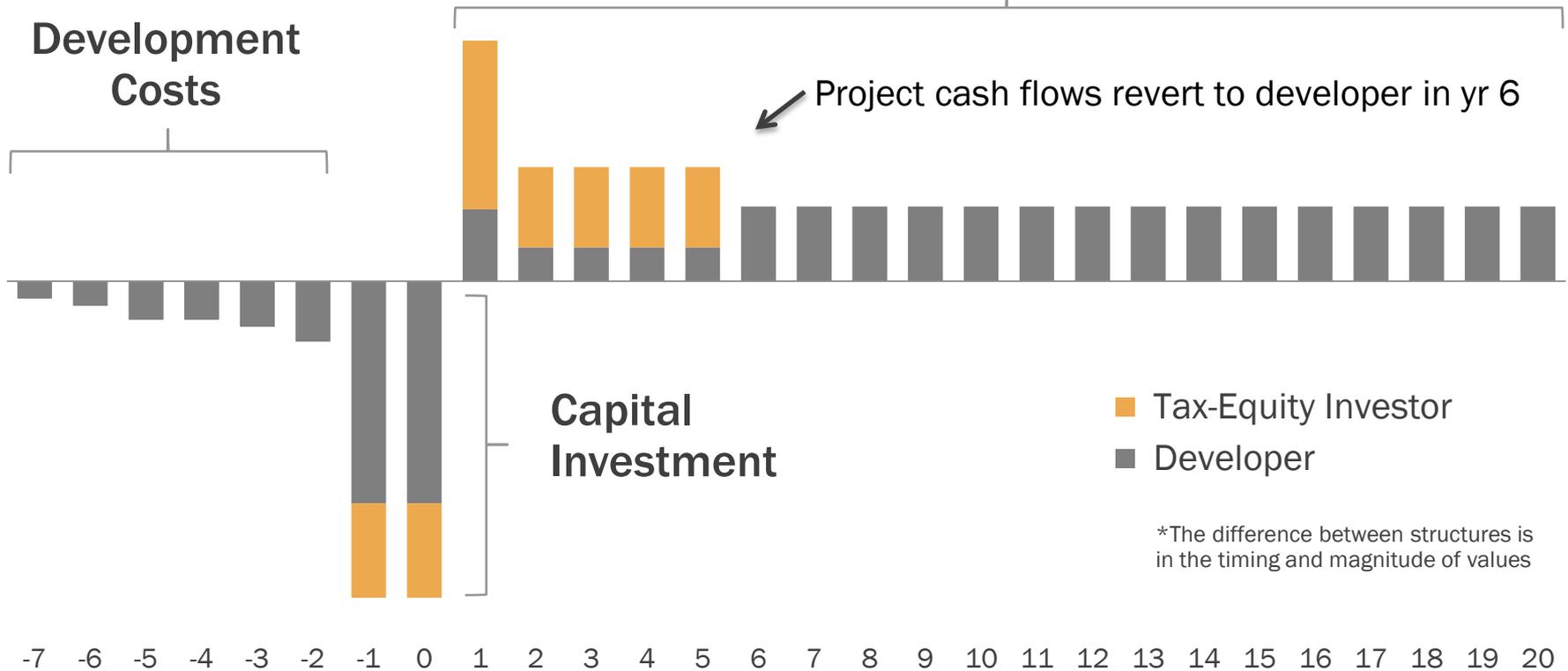
## Inverted Lease



# Cash Flow Example: Inverted Lease/Lease Pass-Through, No Debt



Cash Flows and Tax Benefits\*



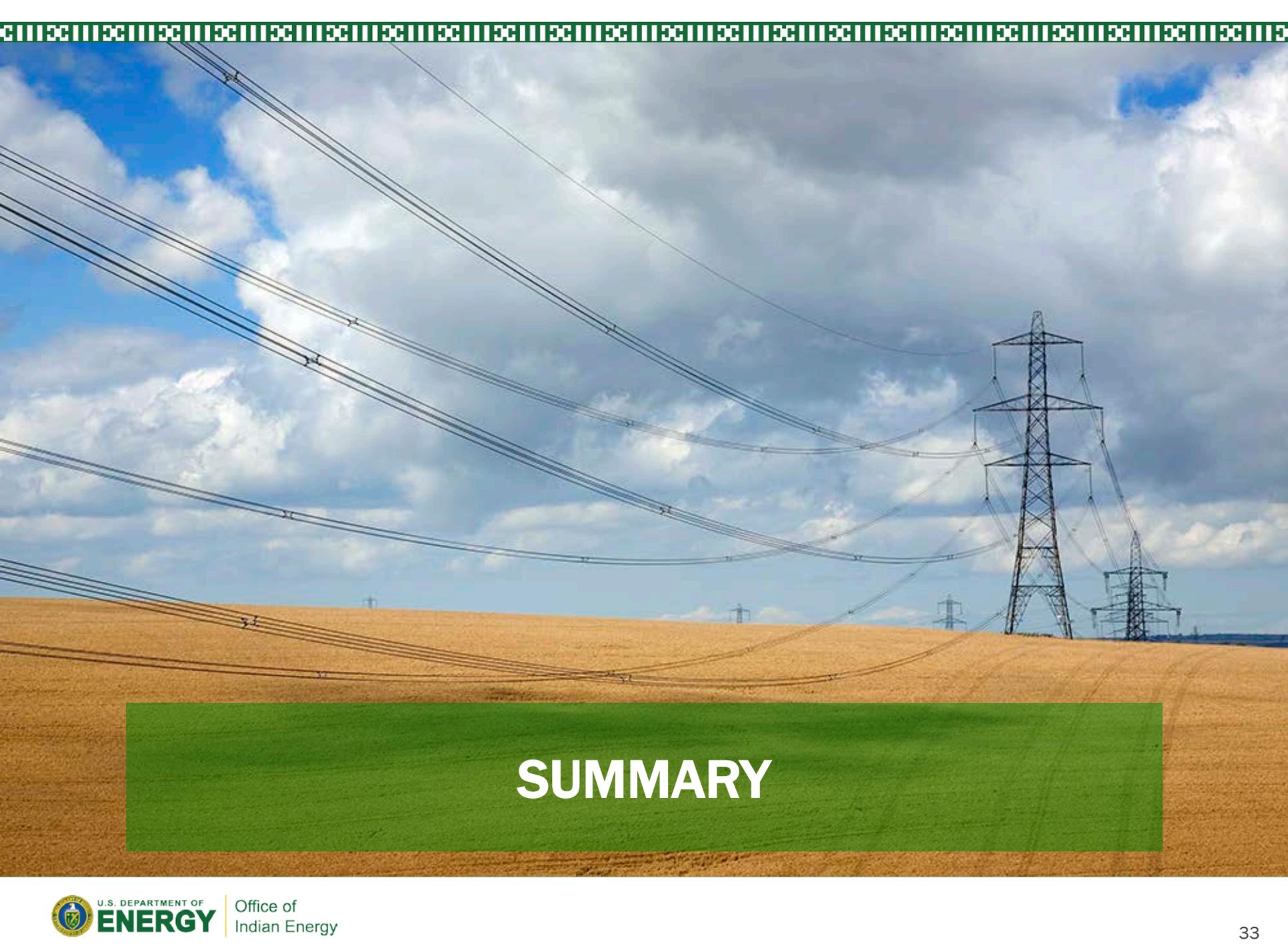
# Inverted Lease/Lease Pass-Through: Advantages and Challenges

## Advantages

- Tribe/developer maintains controlling interest and ownership in project
- Cash flows to Tribe/developer from beginning
- Limits risk to tax-equity investor, possibly increasing availability of investment

## Challenges

- Most complicated of all three tax-equity structures
- Developer must contribute significantly to up-front capital investment
- Not possible for PTC-based project (e.g., wind)
- Limited upside for tax-equity investor



# SUMMARY



# Project Financing Structures: Comparison

Structures	Overview	Characteristics	Tax-Equity Returns
<b>Partnership Flip</b>	Common to wind/solar deals, two participants (tax-equity and developer).	Typically 99%/1% allocations until flip (approx. 6 years), then 5%/95%	8%–12%
<b>Sale Leaseback</b>	Extensive use in solar deals, at least two participants (1. tax-equity investor/lessor, 2. developer/lessee)	Developer sells completed project to tax-equity, leases it back (10–15 years)	10%–15%
<b>Inverted Lease/ Lease Pass-Through</b>	More complex and less common, at least two participants (1. tax-equity investor/lessee, 2. developer/lessor)	Project majority owned by developer, leases to investor, (7–10 years)	10%–15%

# Financing Structures and Tribal Implications

	Direct Ownership	Partnership Flip	Sale Leaseback	Inverted Lease/Lease Pass-Through
Financing	User self-finances system and consumes power on-site	Investor can provide up to 99% financing. Debt can also be part of capital stack.	Investor provides 100% financing. Debt can also be part of capital stack, commonly at developer level.	Investor provides partial financing. Debt is a common part of capital stack.
Up-front Tribal Capital Req.	\$\$\$\$	\$	\$, potentially \$0	\$\$-\$\$\$\$
Ownership	User-owned	Co-ownership by developer and investor	Developer has option to purchase assets at lease term	Assets revert to developer at the lease term
Tax Credit	NA	PTC or ITC	ITC	ITC
Investor Preference	Certain firms have preferences for/familiarity with particular structures and/or technologies. Project specifics may also dictate financial structure selected.			

These courses were designed in coordination with Tracey LeBeau and Pilar Thomas of the DOE Office of Indian Energy by a team including Dan Beckley, Stacy Buchanan, Karlynn Cory, Jason Coughlin, Elizabeth Doris, Mike Elchinger, Sara Farrar-Nagy, Bill Gillies, Travis Lowder, Anirudh Paduru, Paul Schwabe, Bob Springer, Blaise Stoltenberg, and Rachel Sullivan of the National Renewable Energy Laboratory; Joe Cruz and Matt Ferguson of Cohn Reznick; Paul Dearhouse of Dearhouse Consulting Group; and Carolyn Stewart of Red Mountain Energy Partners.

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For more information: [www.energy.gov/indianenergy](http://www.energy.gov/indianenergy)

Additional courses: [www.nerlearning.org](http://www.nerlearning.org)

# THANK YOU



# INFORMATION ON THE CURRICULUM PROGRAM AND OFFERINGS

# Curriculum Structure and Offerings

## Foundational Courses

Provide an overview of foundational information on renewable energy technologies, strategic energy planning, and grid basics

## Leadership and Professional Courses

Cover the components of the project development process and existing project financing structures

# Foundational Courses

## Energy Basics

- Assessing Energy Needs and Resources
- Electricity Grid Basics
- Strategic Energy Planning

## Renewable Energy Technology Options

- Biomass
- Building Heat & Hot Water
- Geothermal
- Hydroelectric
- Solar
- Wind

All courses are presented as 40-minute webinars online at: [www.nerlearning.org](http://www.nerlearning.org)

# Leadership and Professional Courses

## Essentials

### Project Development and Financing Essentials

- Key concepts
- Process overview
- Decision points

## Advanced/In-Depth

### Project Development

- Concepts
  - Risk and uncertainty
  - Tribal project roles
  - Policies and renewable energy (federal & state)
- Process
  - Project scale decision factors
  - Understanding the energy market
  - Project team
  - Procurement

### Project Finance

- Concepts
  - LCOE
  - Business structures
  - Tax-equity partnerships
- Process and Structures
  - Direct ownership
  - Flip
  - Leaseback
  - Inverted lease

### Project Scale

- Facility
- Community
- Commercial